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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/602,374	06/23/2000	Jussi Ruutu	975.305USW1	1766

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EXAMINER

LY, ANH VU H

ART UNIT	PAPER NUMBER
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2662

DATE MAILED: 01/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/602,374

Applicant(s)

RUUTU ET AL.

Examiner

Anh-Vu H Ly

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on amendment filed October 16, 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This communication is in response to applicant's amendment filed on October 16, 2002. The proposed amendment to the claims has been entered. Claims 1-13 are pending.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-11 and 13 are rejected under 35 U.S.C. 102(e) as being anticipated by Bernstein (US Patent No. 5,912,880).

With respect to claims 1, 7, and 9, Bernstein discloses in Fig. 2, a counter 220 for determining N cell arrival events (determining a plurality of actual signal arrival times). Further, Bernstein discloses (see Abstract) a system in a receiver of ATM cells determines an average cell interarrival time (averaging the plurality of actual signal

arrival times) by determining the amount of time required (expected signal arrival time) for a predetermined number of cells to arrive. The system then uses the average cell interarrival time to adjust the internal timing of the receiver (correcting a timing of a receiving clock on a basis of an average of the plurality of actual signal arrival times and an expected signal arrival time).

With respect to claims 2 and 9, Bernstein discloses in Fig. 2, a local internal timing 210 for timing the expected arrival cells (expected signal arrival time derived from the receiving clock).

With respect to claim 3, Bernstein discloses in Fig. 2, a counter 220 for determining N cell arrival events (counting a time period between arrival of a first signal and arrival of a subsequent second signal).

With respect to claim 4, Bernstein discloses in Fig. 4, an interarrival time counter 455 for storing counted time periods and calculating an average (storing counted time periods and calculating an average of store time periods).

With respect to claim 5, Bernstein discloses in Fig. 2, a differentiator 230 and loop filter 240 for determining a difference between the average of arrival times and local time and adjusting the internal timing of the receiver 210 (determining a frequency difference between a frequency corresponding to an average of the plurality of actual

signal arrival times and a frequency of the receiving clock and correcting a timing of a receiving clock on a basis of an average of the plurality of actual signal arrival times and an expected signal arrival time).

With respect to claims 6 and 13, Bernstein discloses a system in a receiver of ATM cells (asynchronous transmission is an ATM transmission and the signal is an ATM cell).

With respect to claim 8, Bernstein discloses in Fig. 4, VCO 440 for controlling internal timing (means for correcting comprises a voltage controlled oscillator).

With respect to claim 10, Bernstein discloses in Fig. 4, buffer register 460 for storing cells (storing a plurality of detected actual signal arrival times).

With respect to claim 11, Bernstein discloses in Fig. 2, an internal timing 210 (means for detecting comprises a timer).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bernstein (US Patent No. 5,912,880) in view of Pitio et al (US Patent o. 5,834,980).

With respect to claim 12, Bernstein discloses a system for adjusting the internal timing of the receiver as a function of an average of arrival signal times and local time. Bernstein does not disclose a phase detector and wherein a polarity of the control signal is changed in accordance with a result of comparison. Pitio et al disclose in Fig 4., VCO bias control circuit 31 controlled by the polarity of the phase detector 41. It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a phase detector in Bernstein's timing recovery system, as suggested by Pitio et al, since phase detector has been applied and used in many applications for controlling the voltage controlled oscillator.

Response to Arguments

4. Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Powell (US Patent No. 6,111,878) discloses low jitter timing recovery technique and device for ATM CBR payloads.

Hein (US Patent No. 6,148,049) discloses method for synchronization of a clock signal, which can be generated in a data receiving station, with a clock signal which is used in a data transmission station.

Spagnoletti et al (US Patent No. 6,151,356) disclose method and apparatus for phase detection in digital signals.

Law et al (US Patent No. 6,167,048) disclose clock recovery for video communication over ATM network.

Banwell et al (US Patent No. 6,285,722) disclose method and apparatus for variable bit rate clock recovery.

Muntz et al (US Patent No. 5,896,427) disclose system and method for maintaining networks synchronization utilizing digital phase comparison techniques with synchronous residual time stamps.

Muntz et al (US Patent No. 5,822,383) disclose system and method for maintaining network synchronization utilizing digital phase comparison techniques with SRTS.

Muntz et al (US Patent No. 5,812,618) disclose SRTS clock recovery system implementing adaptive clock recovery techniques.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh-Vu H Ly whose telephone number is 703-306-5675. The examiner can normally be reached on Monday-Friday 7:00am - 4:00pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 703-305-4744. The fax phone numbers

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for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

av
December 17, 2002



HASSAN KIZOU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600